

WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS

PATENT OF THE U.S. IS:

1. A liquid developer, comprising:

an electrically insulating solvent; and

5 a plurality of toner particles, each comprising a resin particle non-soluble in the electrically insulating solvent, and pigment particles selectively formed on a surface of the resin particle.

2. The liquid developer of claim 1, wherein the resin particle has a glass transition temperature of not less than room temperature.

10 3. A liquid developer, comprising:

an electrically insulating solvent; and

a plurality of toner particles, each comprising a resin particle non-soluble in the electric insulation solvent, and pigment particles formed on a surface of the resin particle, a coverage rate of the surface of the resin particle by the pigment particles being 3.5 % or

15 more.

4. The liquid developer of claim 3, wherein the resin particle has a glass transition temperature of not less than room temperature.

5. The liquid developer of claim 3, wherein the pigment particles being selectively formed on a surface of the resin particle.

20 6. A liquid developer, comprising:

an electrically insulating solvent; and

a plurality of toner particles, each containing a resin particle non-soluble in the electric insulation solvent and pigment particles, the toner particles comprising a surface portion and an inside portion, a first density of the pigment particles per unit volume of the

resin particle at the surface portion being larger than a second density of the pigment particles per unit volume of the resin particle at the inside portion.

7. The liquid developer of claim 6, wherein the resin particle has a glass transition temperature of not less than room temperature.

5       8. The liquid developer of claim 6, wherein the pigment particles are selectively formed on the surface portion of the resin particle.

9. The liquid developer of claim 6, wherein a coverage rate of a surface of the resin particle by the pigment particles is 3.5% or more.

10     10. The liquid developer of claim 6, wherein the surface portion has a thickness of from about 10 nm to 1 µm.

11. The liquid developer of claim 6, wherein the surface portion of the toner particle has a thickness of about three times as the average diameter of the pigment particles, and the inside portion of the toner particle is a rest of the toner particle other than the surface portion.

12. A method of manufacturing a liquid developer, comprising steps of:

15      preparing an electrically insulating solvent;

      adding to the electrically insulating solvent a plurality of resin particles insoluble in the electric insulation solvent and a plurality of pigment particles; and

      milling the electrically insulating solvent with the plurality of resin particles and the plurality of pigment particles at a temperature not more than a glass transition temperature of  
20      the resin particles.

13. The method of claim 12, further comprising a preliminary milling step performed before the milling step at the temperature not more than the glass transition temperature of the resin particle, the preliminary milling step being operated at a temperature higher than the glass transition temperature of the resin particle.

25      14. An image forming apparatus, comprising:

- a latent image retaining body;
- a developing unit disposed adjacent to the latent image retaining body, the developing unit configured to develop a latent image formed on the latent image retaining body;
- 5        a liquid developer used by the developing unit to develop the latent image, the liquid developer comprising an electrically insulating solvent and a plurality of toner particles, each of the plurality of toner particles containing a resin particle and pigment particles, the resin particle being non-soluble in the electrically insulating solvent, each of the toner particles comprising a surface portion and an inside portion, a first density of the 10      pigment particles per unit volume of the resin particle at the surface portion being larger than a second density of the pigment particles per unit volume of the resin particle at the inside portion; and
- an intermediate transfer body contacting the latent image retaining body at a transfer station and receiving a pressure of  $0.5 \text{ kg/cm}^2$  to  $50 \text{ kg/cm}^2$  from the latent image 15      retaining body at the transfer station, the intermediate transfer body configured to receive a developed latent image at a surface speed at the transfer station of from 80 % to 99 % or from 101 % to 120 % of the surface speed of the latent image retaining body at the transfer station.
15. The apparatus of claim 14, further comprising a solvent removing unit configured to remove the electrically insulating solvent existing on the latent image retaining 20      body.
16. The apparatus of claim 15, wherein the solvent removing unit comprising at least one of a squeezing roller and a solvent suction device.
17. An image forming method comprising steps of:
- forming a latent image on a latent image retaining body;

developing the latent image on the latent image retaining body using a liquid developer, the liquid developer comprising an electrically insulating solvent and a plurality of toner particles, each comprising a resin particle non-soluble in the electrically insulating solvent and pigment particles, the toner particles comprising a surface portion and an inside portion, a first density of the pigment particles per unit volume of the resin particle at the surface portion being larger than a second density of the pigment particles per unit volume of the resin particle at the inside portion, and

transferring an image developed on the latent image retaining body to an intermediate transfer body applying a shear pressure to an image developed on the latent image retaining body.

18. The method of claim 17, wherein the transferring step comprises:  
applying a pressure of  $0.5 \text{ kg/cm}^2$  to  $50 \text{ kg/cm}^2$  from the latent image retaining body  
to the intermediate transfer body at a transfer station during the transfer step with a surface of  
the intermediate transfer body at the transfer station moved faster or slower than a moving  
15 speed of surface of the latent image retaining body at the transfer station during the transfer  
step.

19. The method of claim 18, wherein a surface speed of the intermediate transfer body at the transfer station ranges from about 80 % to about 99% or from about 101 % to about 120 % of a surface speed of the latent image retaining body at the transfer station.